

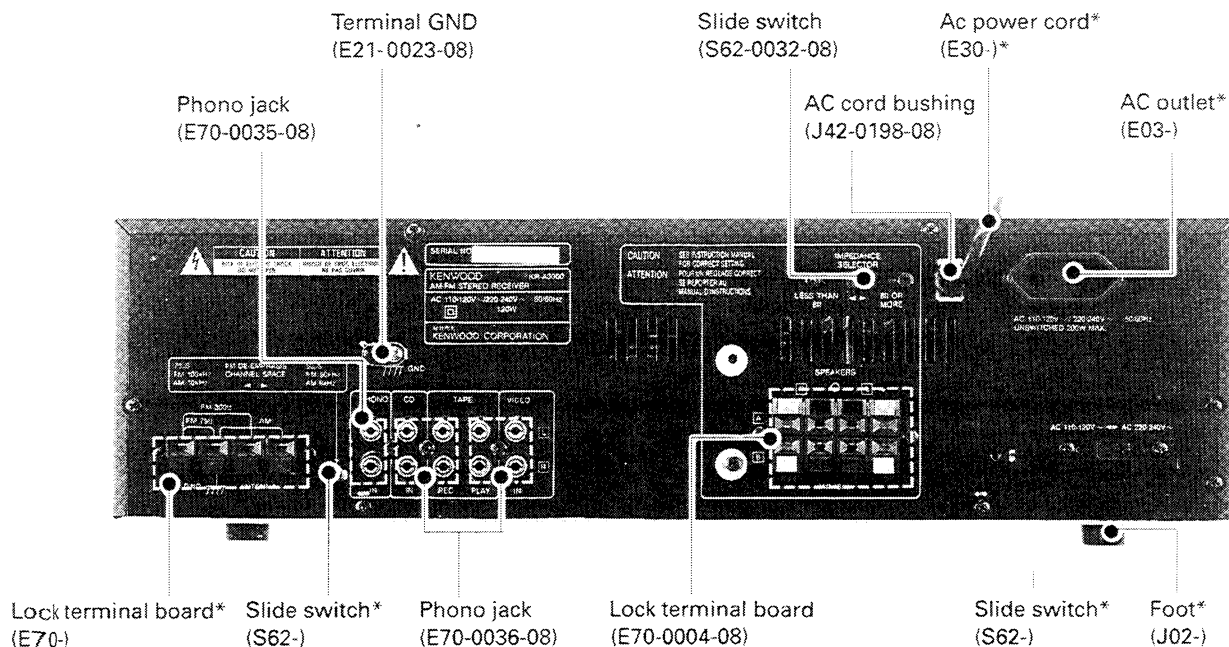
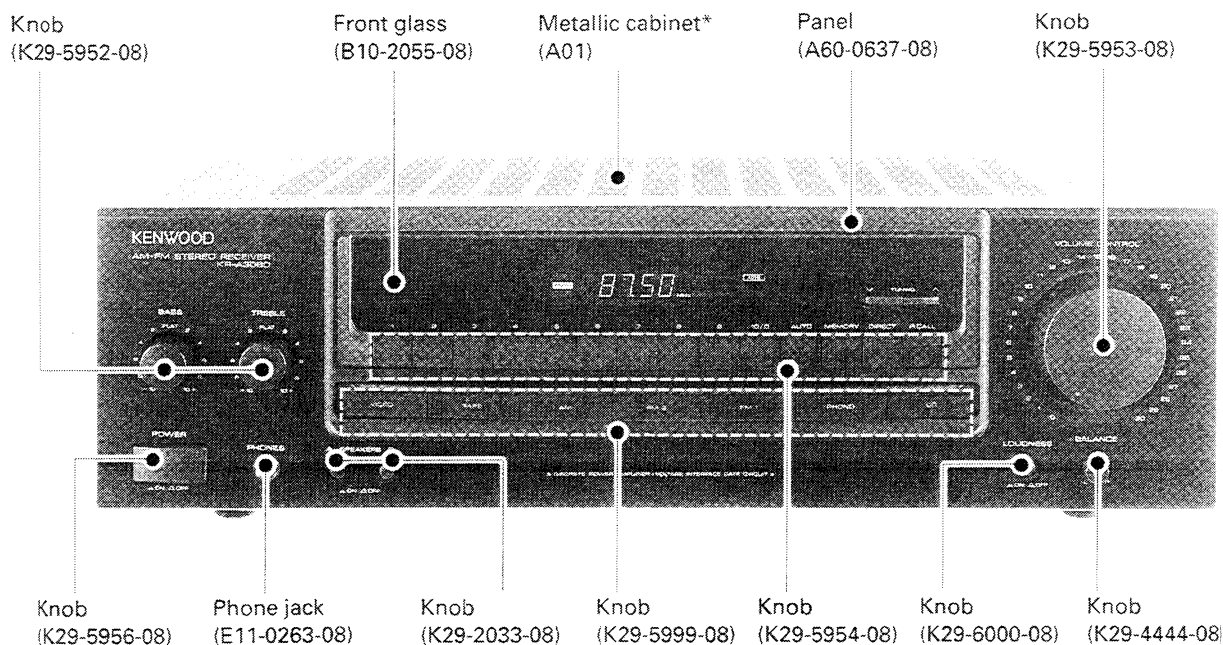
AM-FM STEREO RECEIVER

# KR-A3060

## SERVICE MANUAL

# KENWOOD

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B51-4890-00(K) 3350



\*Refer to parts list on page 24

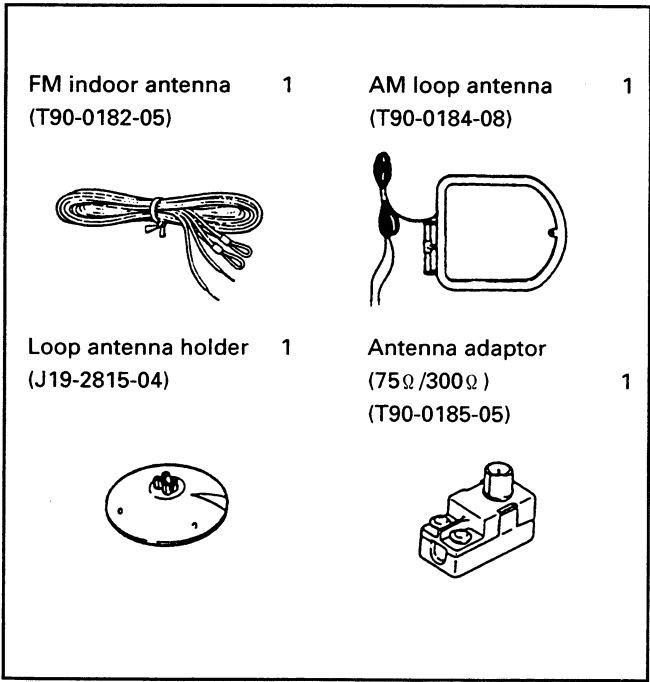
# KR-A3060

## CONTENTS/ACCESSORIES

### Contents

CONTENTS/ACCESSORIES .....	2	PC BOARD .....	11
DISASSEMBLY FOR REPAIR .....	3	SCHEMATIC DIAGRAM .....	15
BLOCK DIAGRAM .....	4	EXPLODED VIEW .....	23
CIRCUIT DESCRIPTION .....	5	PARTS LIST .....	24
ADJUSTMENT .....	8	SPECIFICATIONS .....	BACK COVER
WIRING DIAGRAM .....	9		

### Accessories



### INSTRUCTION MANUAL

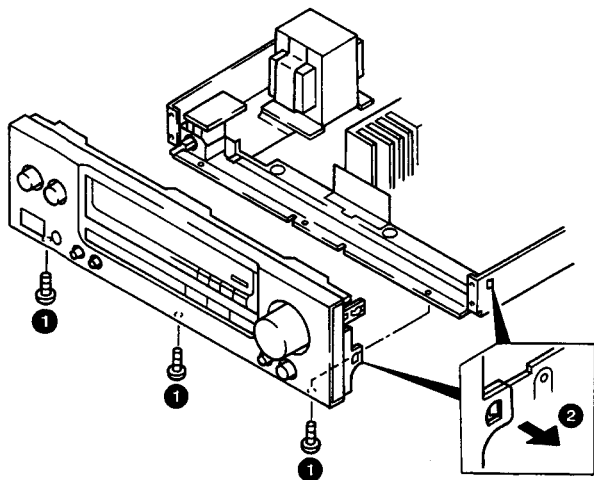
		TYPE
B60-1583-08	ENGLISH	K, X
B60-1584-08	ENG, FRE	P
B60-1585-08	EN, FR, DU, NE, IT	E
B60-1586-08	ENG, CHI	M
B60-1681-08	SPANISH	R

## DISASSEMBLY FOR REPAIR

**Note : Remove the case before starting**

### Removing the front panel and sub-panel

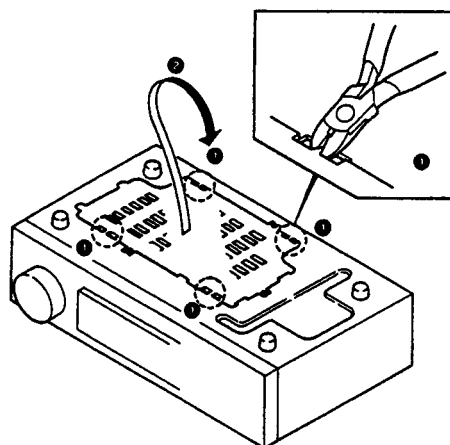
Remove the three screws ❶ and two claws ❷, then remove the front panel.



### How to remove the repairing chassis

1. Cut the four parts ❶ of the repairing chassis.

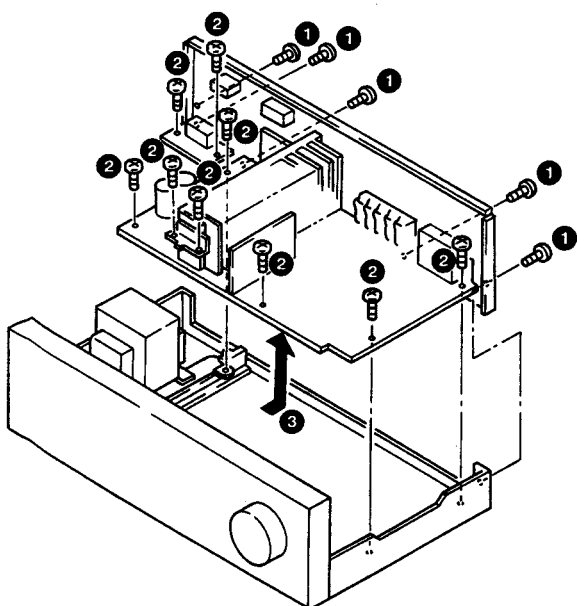
Remove the repairing chassis from main chassis.



### Removing the main PC board

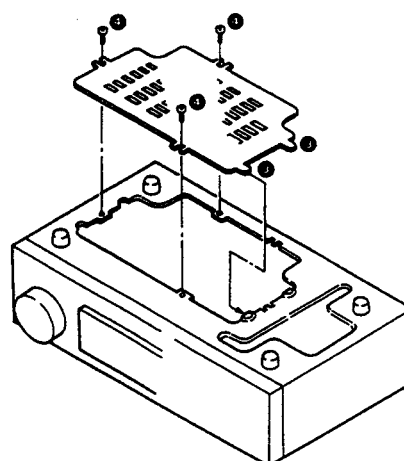
The main PC board can be removed even if the front panel and sub-panel have not been.

1. Remove the five screws ❶ from the rear panel.
2. Remove the nine screws ❷.
3. Remove the main PC board in the direction of arrow ❸.



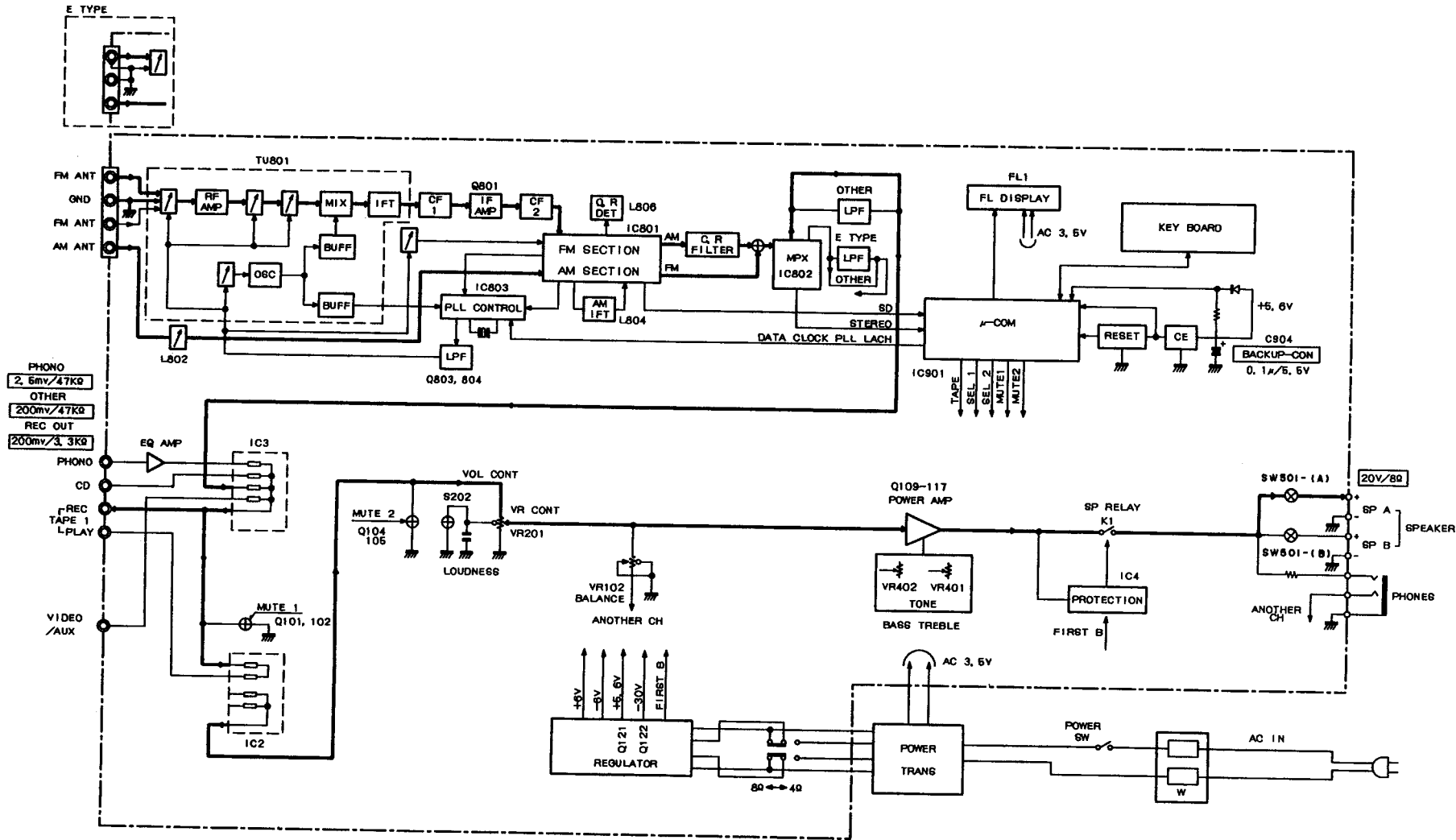
### After repair

2. Turn the repairing chassis 180 degrees in the arrow direction ❷.
3. Insert the two claws ❸ into main chassis.
4. Lock to the main chassis by three screws (M3 × 6) ❹.



# KR-A3060

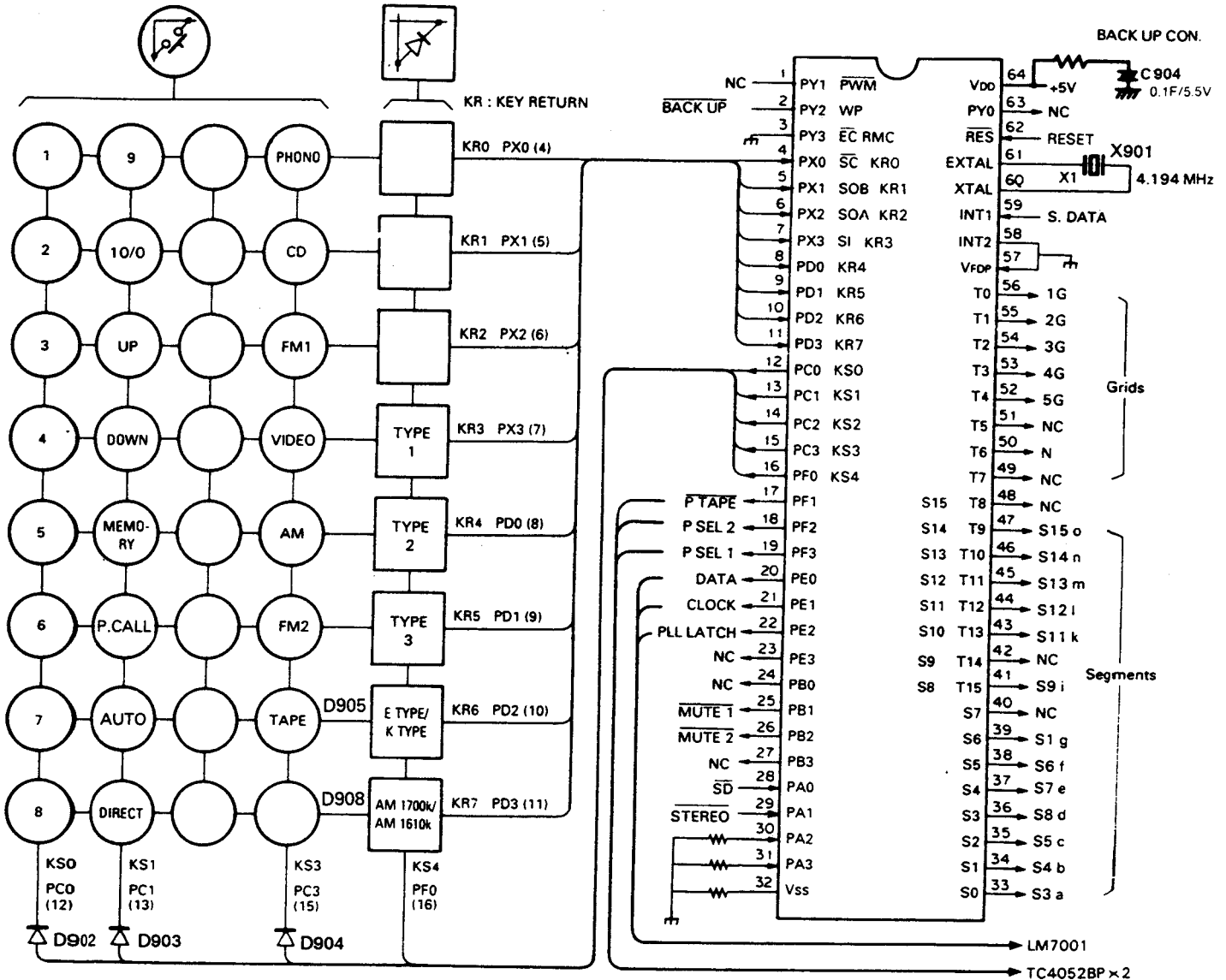
## BLOCK DIAGRAM



## CIRCUIT DESCRIPTION

### 1. CXP5016-531S : Receiver microprocessor(FRONT UNIT : IC901)

#### 1-1. Key Matrix connections



#### 1-2. Setting of destinations, models and specifications depending upon diode key matrix

The setting of destinations, models and specifications is made according to the initial set diode key matrix.

In the following, "1" means "with diodes" and "0", "without diodes"

#### 1) Model Set SW

Model set SW			MODEL	Function				
TYPE 1	TYPE 2	TYPE 3		TUNER BAND	DOLBY SURROUND	VOL.CONT with Motor	Switched VIDEO1, 2	REMOCON
0	0	1	-	FM1→FM2→AM	Provided	Provided	Provided	Provided
1	0	1	-	↑	Not provided	↑	↑	↑
0	1	0	-	↑	↑	↑	Not provided	↑
0	0	0	KR-A3060	FM1, FM2, AM	↑	Not provided	↑	Not provided

# KR-A3060

## CIRCUIT DESCRIPTION

### 1-3. Initial Setting

#### 1) Function initial setting

Last channel memory ..... FM : 87.5MHz  
 ..... AM(K) : 530kHz  
 ..... AM(E) : 531kHz  
 Tuning mode ..... Auto  
 Input selector ..... FM1  
 Muting ..... OFF

#### 2) Microprocessor output port initial setting

Any figure in ( ) is a pin number.

MUTE 1(25) ..... H  
 MUTE 2 (26) ..... H

The initial setting is performed in a following event :

1. When backup memory data is destroyed when reset is applied to the microprocessor.
2. When the power cord is plugged in to the AC wall outlet while pressing the FM1 key.

### 1-4. Test Mode Setting

#### 1) Method of entering the test mode

1. While pressing the CD key, plug the power cord to the AC wall outlet. When the test mode is entered, the FL tube display all lights.

#### 2) Method of canceling the test mode

1. Unplug the power cord from the AC wall outlet once.
2. Send the reset signal to the RESET pin or some other means to reset the microprocessor.

#### 3) Contents of test mode

1. When the test mode is entered, the FL tube display all lights. This all lighting continues unless the test mode is canceled.
2. The test frequency is stored in memory for each preset channel.(For each frequency to be stored in memory, refer to its associated listing.)

### 1-5. Frequency memorized for each PRESET channel when the memory is cleared(Test frequency)

BAND	FM1		FM2		FM3	
Destination	K	E	K	E	K	E
1	87.5MHz	87.5MHz	87.5MHz	87.5MHz	530kHz	531kHz
2	89.1	89.1	87.5	87.5	630	630
3	90.0	90.0	87.5	87.5	990	990
4	92.0	92.0	87.5	87.5	1440	1440
5	94.0	94.0	87.5	87.5	1610	1602
6	98.0	98.0	87.5	87.5	1700*	531
7	100.1	100.1	87.5	87.5	530	531
8	102.0	102.0	87.5	87.5	530	531
9	106.0	106.0	87.5	87.5	530	531
10	108.0	108.0	87.5	87.5	530	531

\*1700kHz is set for WIDE only.

### 1-6. Destination set SW : E type/K type

Destination set SW	Destination	Band	Reception frequency band	Channel space	Reference frequency
0	K	FM	87.5~108.0MHz	100kHz	50kHz
		AM	530~1610kHz 530~1700kHz	10kHz	10kHz
1	E	FM	87.5~108.0MHz	50kHz	50kHz
		AM	531~1602kHz	9kHz	9kHz

0 : Without diode

1 : With diode(D905 or Q902 ON state)

**K type is described for reference.**

### 1-7. Specification set SW : AM 1700k/AM 1610k

With destination set SW at "0" : Effective only for K TYPE

Specification set SW	AM reception frequency band
0	530~1610kHz
1	530~1700kHz

0 : Without diode

1 : With diode(D908)

## CIRCUIT DESCRIPTION

## 1-8. Pin description

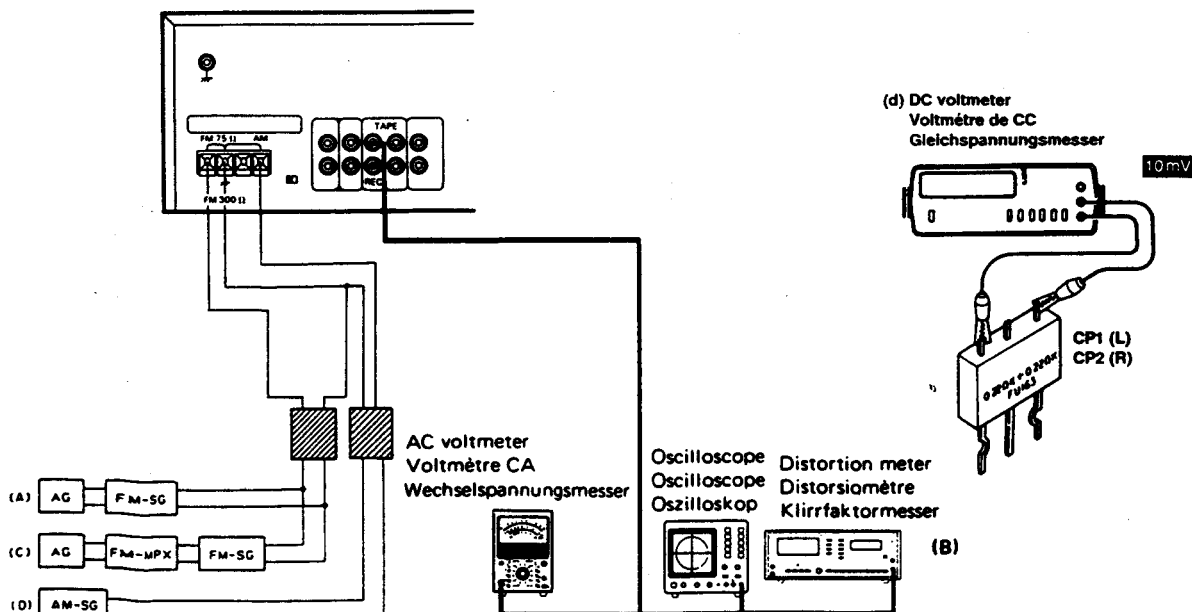
Pin No.	Pin name	I/O	Name	Function
1	PY1	O	—	N.C.
2	PY2	I	BACK UP	Backup (AC outlet off) detection. High: Normal state Low: AC outlet off  When the power is switched on, high is input. When low is input, the microprocessor stops clock generation and enters the backup state. When the signal changed from low to high, the backup state changes to the normal state.
3	RMC	I	—	GND.
4~11	PX0~PX3 PD0~PD3	I	KR0~KR7	KEY RETURN signal input. High: There is input. Low: There is no input.
12~16	PC0~PC3 PF0	O	KS0~KS4	KEY SCAN signal output. Normally high is output. Key scan is performed when KEY is ON.
17	PF1	O	PTAPE	TC4052BP (selector IC) control. Tape monitor on/off control. High: OFF Low: ON
18	PF2	O	PSEL2	TC4052BP (selector IC) control.
19	PF3	O	PSEL1 (H9070)	TC4052BP (selector IC) control.
20	PE0	O	DATA	LM7001 (PLL IC) control serial data output. Data is latched on the rising edge of the clock.
21	PE1	O	CLOCK	LM7001, control serial data transfer shift clock output. Data is latched on the rising edge of the clock.
22	PE2	O	PLLLT	CE signal output to LM7001. When the signal is high, LM7001 is enabled.
23	PE3	O	—	N.C.
24	PB0	O	—	N.C.
25	PB1	O	MUTE 1	TAPE REC OUT mute control. High: MUTE OFF Low: MUTE ON
26	PB2	O	MUTE 2	LINE OUT mute control. High: MUTE OFF Low: MUTE ON
27	PB3	O	—	N.C.
28	PA0	I	SD	Tuner tuned detection. High: NO SIGNAL Low: TUNED
29	PA1	I	STEREO	Tuner FM stereo detection. High: MONO Low: Stereo
30	PA2	I/O	—	Unused pin.
31	PA3	I/O	—	Unused pin.
32	Vss	—	GND	GND.
33~47	S0~S14	O	Sa~So	Fluorescent display segment drive signal output.
48~51	T8~T5	O	—	N.C.
52~56	T4~T0	O	G5~G1	Fluorescent display digit drive signal output.
57	V <sub>FD</sub>	—	—	Unused pin. This pin and GND are shorted.
58	INT2	I	—	Unused pin. This pin and GND are shorted.
59	INT1	I	SDATA	This pin and serial data input pin 30 are shorted.
60	XTAL	O	XTAL	Clock generation circuit output.
61	EXTAL	I	EXTAL	Clock generation circuit input.
62	RST	I	RESET	Reset signal input.
63	PY0	O	—	N.C.
64	V <sub>DD</sub>	—	V <sub>DD</sub>	+5 V power supply.

# KR-A3060

## ADJUSTMENT

AM Section: If alignment point is "-", Confirm the value.  
If not, replace the front end pack.

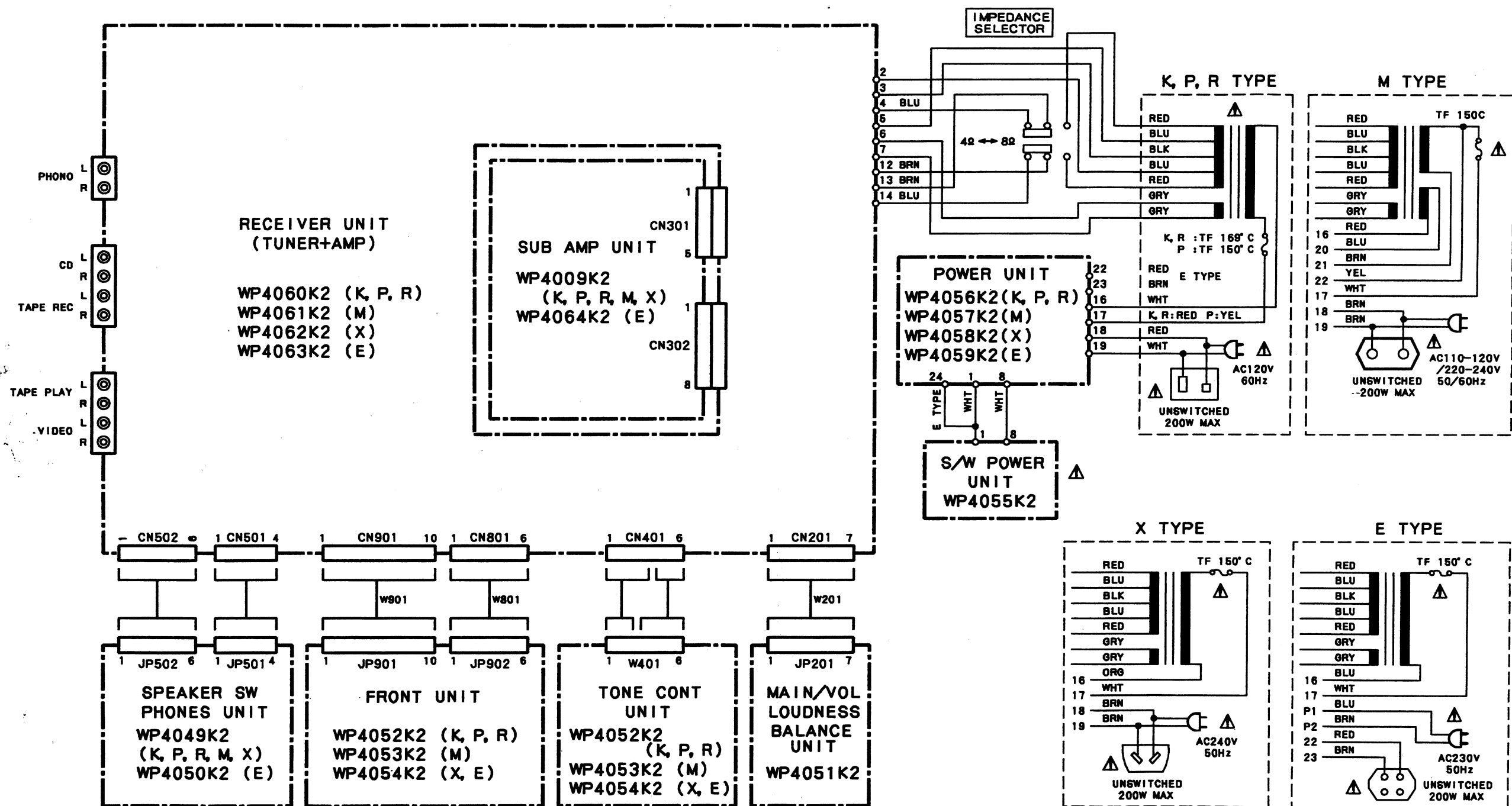
No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION SELECTOR: FM							
1	DISCRIMINATOR	(A) 98.0MHz 1kHz, $\pm 75$ kHz dev. 60dB $\mu$ (ANT. input)	Connect a DC voltmeter between TP803 and TP804. (RECEIVER UNIT)	AUTO or MONO 98.0MHz	L806 (RECEIVER UNIT)	0V	(a)
2	VCO	(A) 98.0MHz 0 dev. 60dB $\mu$ (ANT. input)	Connect a frequency counter between TP805 and TP806. (RECEIVER UNIT)	AUTO 98.0MHz	VR802 (RECEIVER UNIT)	19.00kHz	(b)
3	DISTORTION (STEREO)	(C) 98.0MHz 1kHz, $\pm 68.25$ kHz dev. Selector: L or R Pilot: $\pm 6.75$ kHz dev. 60dB $\mu$ (ANT. input)	(B)	98.0MHz	IFT (W02-)	Minimum distortion. (L or R)	
4	SEPARATION (E type only)	(C) 98.0MHz 1kHz, $\pm 40$ kHz dev. Pilot: 6kHz dev. Selector: L or R 60dB $\mu$ (ANT. input)	(B)	AUTO 98.0MHz	VR803 (RECEIVER UNIT)	Minimum crosstalk	
5	TUNING LEVEL	(A) 98.0MHz 0 dev 18dB $\mu$ (ANT. input)	(B)	AUTO or MONO 98.0MHz	VR801 (RECEIVER UNIT)	Adjust VR801 and stop at the point where FLT901(TUNED) goes on.	
AM SECTION SELECTOR: AM							
(1)	TUNING LEVEL	(D) 1000(999)kHz 26dB $\mu$ (ANT. input)	(B)	-	VR804 (RECEIVER UNIT)	Adjust VR804 and stop at the point where FLT901(TUNED) goes on.	
AUDIO SECTION							
<1>	IDLE CURRENT	-	Connect a DC voltmeter across CP1(L) CP2(R) (RECEIVER UNIT)	Volume: 0	VR101(L) VR102(R) (RECEIVER UNIT)	10mV	(d)





# KR-A3060 KR-A3060

## WIRING DIAGRAM

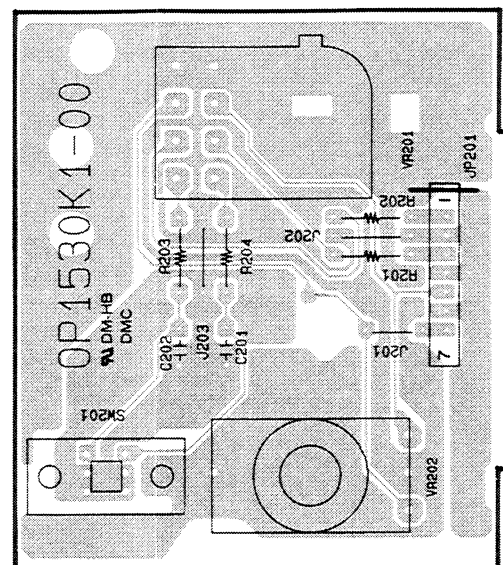


## 2

3



6



FRONT



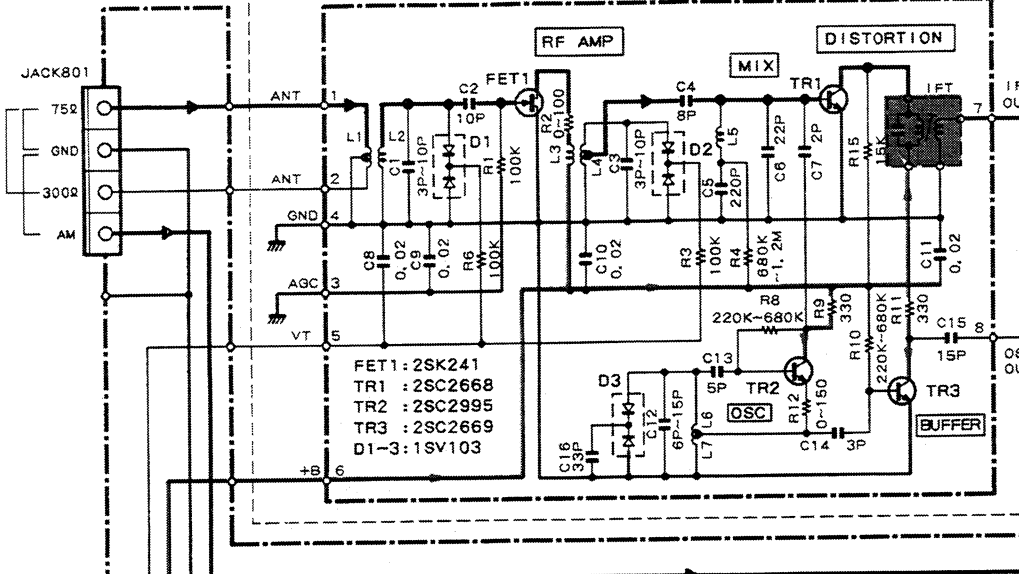
A B C D E F G H I J





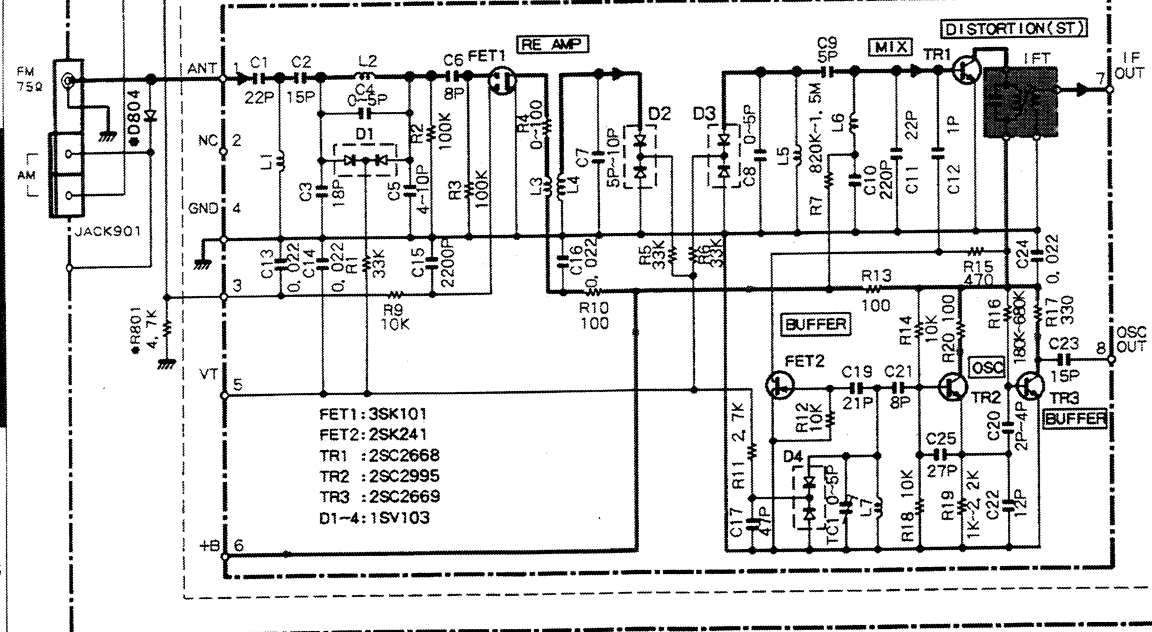
K, P, R, M, X TYPE

### TU801 FM FRONT END

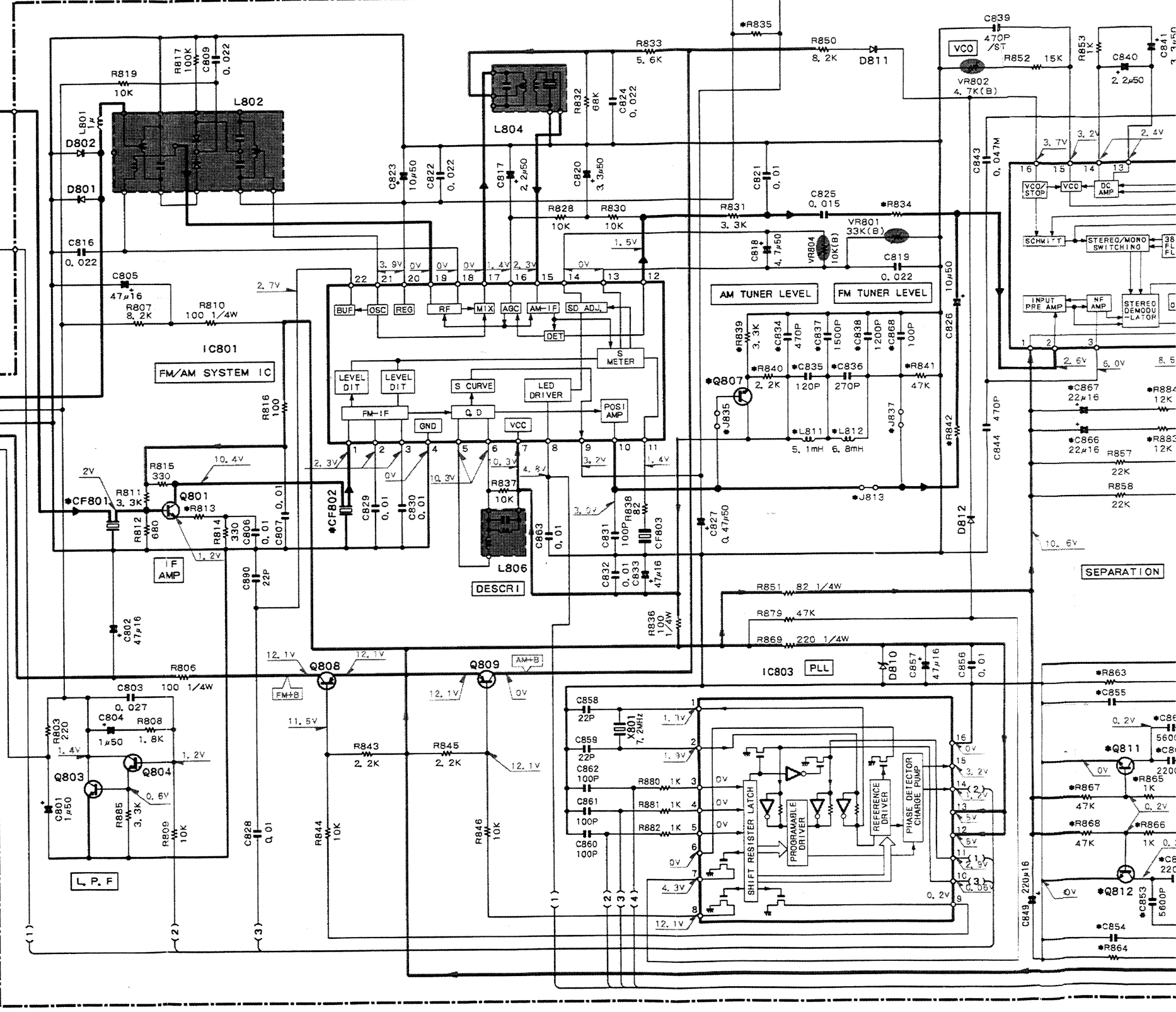


E TYPE

### TU801 FM FRONT END



RECEIVER UNIT(TUNER) WP4060K2(K, P, R) WP4061K2(M) WP4062K2(X) WP4063K2(E)



RECEIVER UNIT(TUNER)

UNIT	ABB	Q807	Q811	R801, 802 839-841 859, 883 884	R813	R834	R835	R842	R860	R861, 862	R863, 864	R865-868	R855, 856	C834-838 848 866-868	C846, 847	C850, 851	C852, 853 864, 865	C854, 855	D804	L809-812	J806, 814 821, 822	J835-837	VR803	SW801	CF801, 802
WP4060K2	K, P, R	NO	NO	NO	56	36K	15K	39K	YES	3.6K	39K	NO	51K	NO	150P	1μ50	NO	0.022μF	NO	NO	YES	NO	NO	NO	E10, 7MS5
WP4061K2	M	NO	YES	NO	56	36K	39K	39K	YES	3.6K	39K	YES	51K	NO	150P	1μ50	YES	0.015μF	NO	NO	YES	NO	NO	YES	E10, 7MS5
WP4062K2	X	NO	NO	NO	22	47K	39K	47K	NO	3.3K	3.3K	NO	47K	YES	1000P	2.2μ50	NO	4700PF	YES	YES	NO	YES	YES	NO	E10, 7MS3
WP4063K2	E	YES	YES	YES	22	47K	47K	47K	NO	3.3K	3.3K	NO	47K	YES	1000P	2.2μ50	NO	4700PF	YES	YES	NO	YES	YES	NO	E10, 7MS3

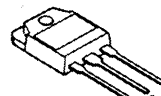
RECEIVER UNIT(TUNER)

IC801	: LA1265	Q801	: KHR-TP31940
IC802	: AN7470	Q803, 807	: 2SC1740S(Q, R)
IC803	: LM7001	811, 812	: 2SC1845(F, E)
		Q804	: 2SA933S(Q, R)
		Q808, 809	

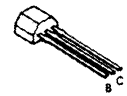
2SA992  
2SC1845  
2SC2878



2SA1694\*5  
2SC4467\*5



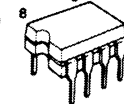
2SA933S  
2SC1740S



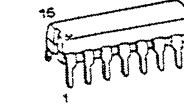
2SC4137



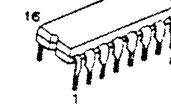
NJM4558DD



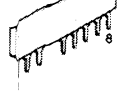
LM7001



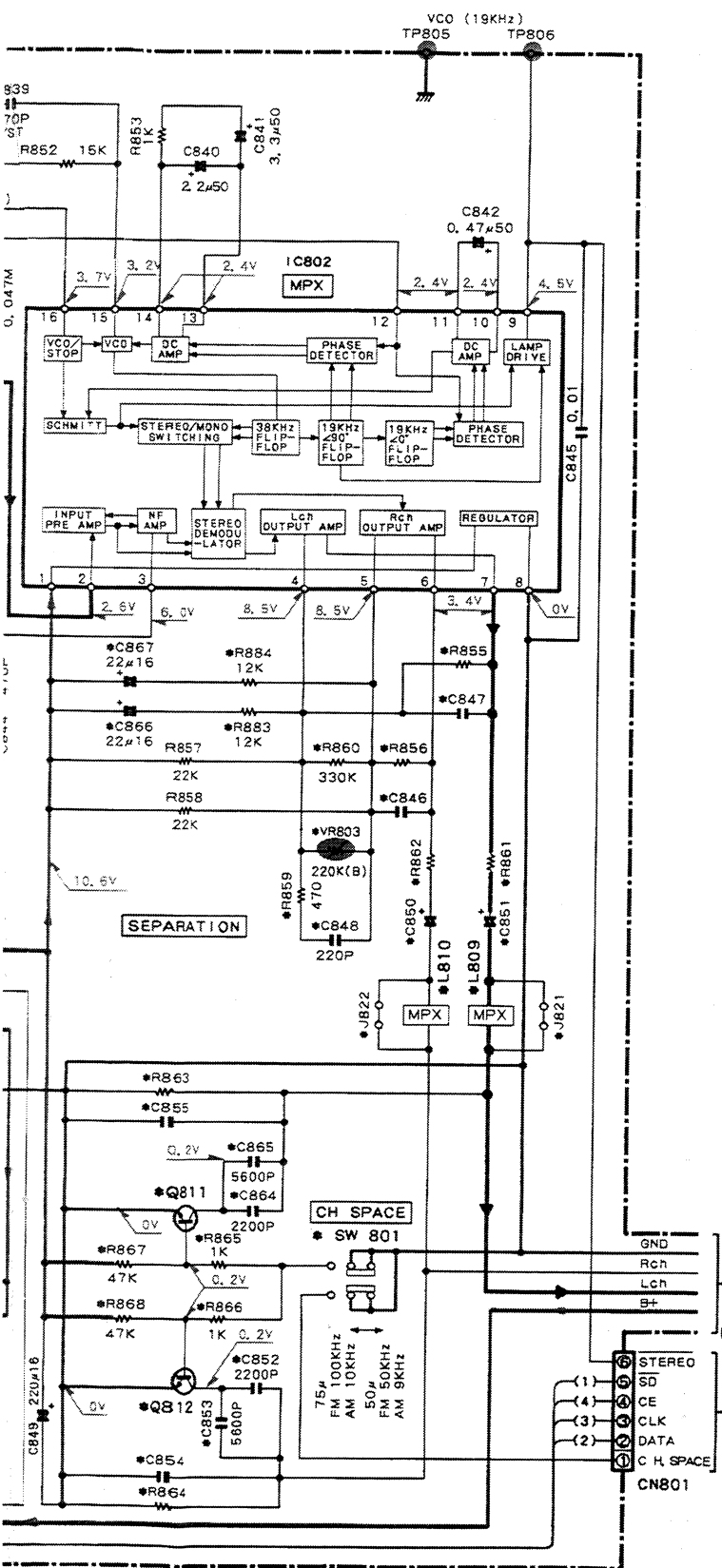
AN7470  
TC 40528P



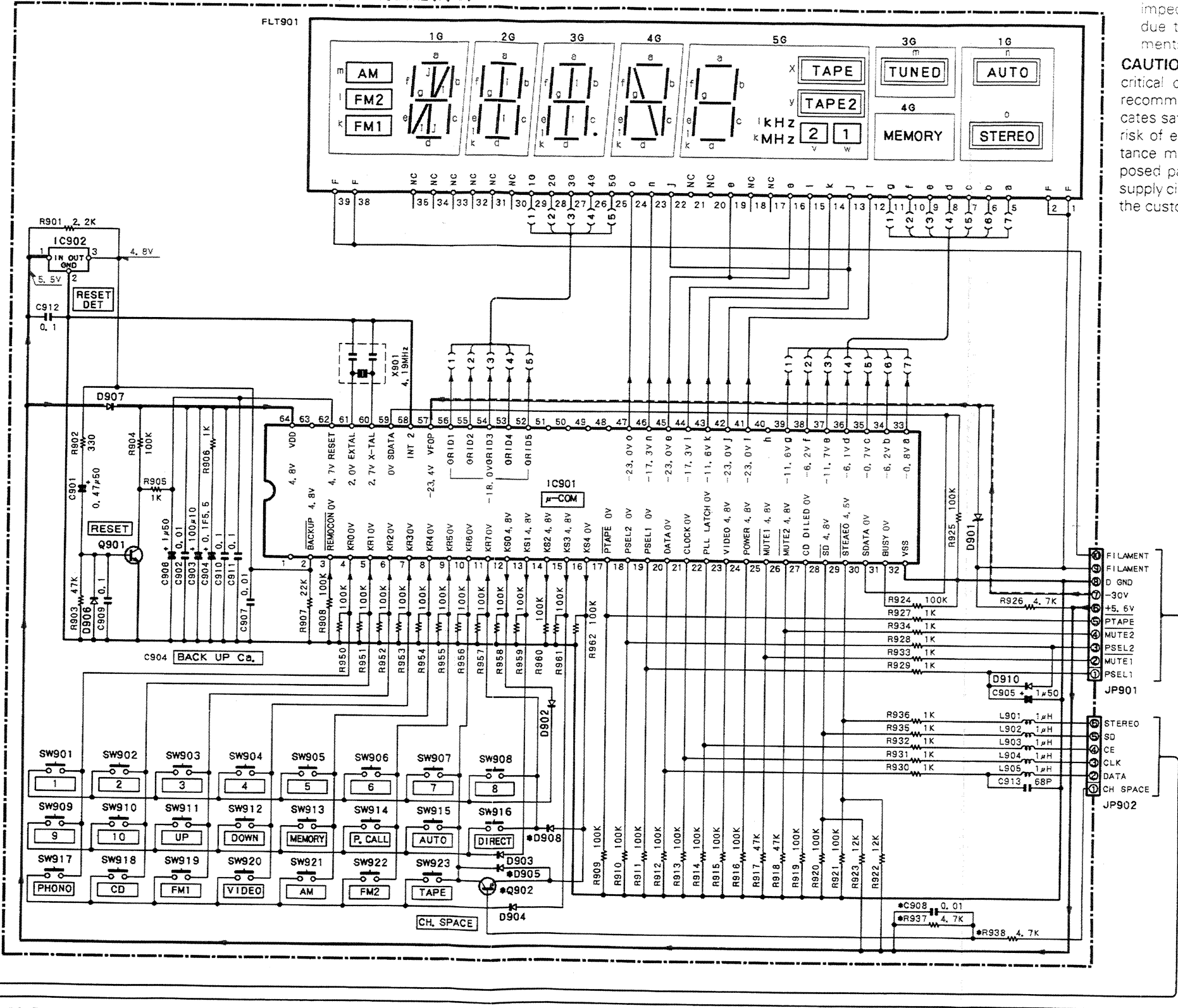
UPC1237HA



UPC7



# FRONT UNIT WP4052K2(K, P) WP4053K2(M) WP4054K2(X, E)



• DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  $\Delta$  indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

## FRONT UNIT

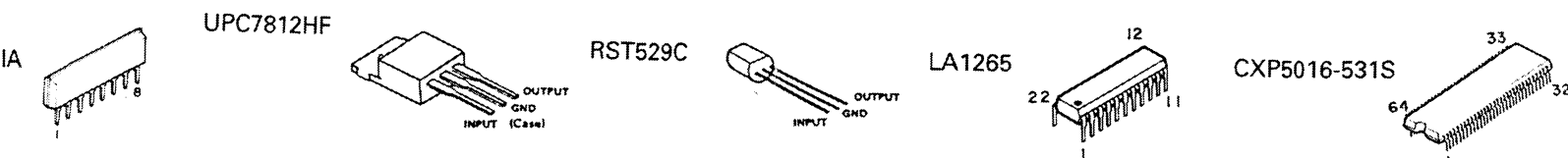
IC901 : CXP5016-5315  
 IC902 : RST529C  
 Q901 : 2SC1740S  
 Q902 : 2SA933S  
 D901 : RD10ES(B2)  
 D902-908, 910 : RD10ES(B2)  
 FLT901 : 5-MT-167GK

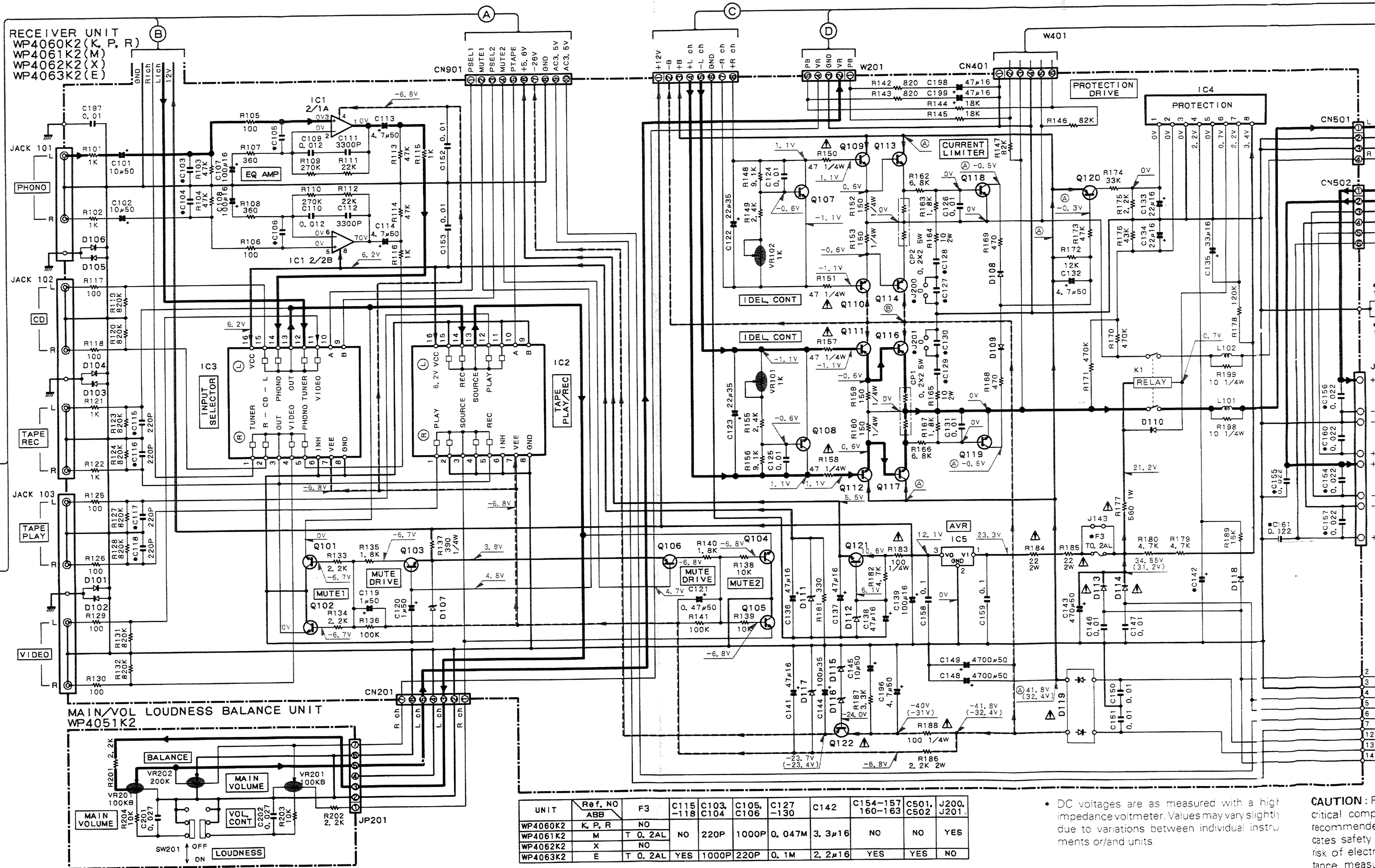
## FRONT UNIT

UNIT	ABB	Q902	D905	D908	R937 R938	C908
WP4052K2	K, P, R	NO	NO	YES	NO	NO
WP4053K2	M	YES	NO	NO	YES	YES
WP4054K2	X, E	NO	YES	NO	NO	NO

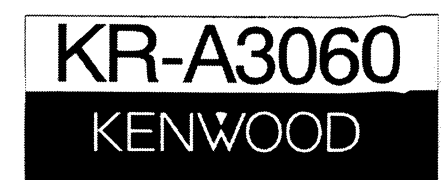
— SIGNAL LINE  
 — GND LINE  
 — +B LINE  
 - - - -B LINE

807 : KHR-TP319401  
 812 : 2SC1740S(Q, R)  
 809 : 2SC1845(F, E)  
 : 2SA933S(Q, R)  
 D801, 802, 804 : ISS133  
 811, 812 :  
 D810 : RD5, 1ES(B2)



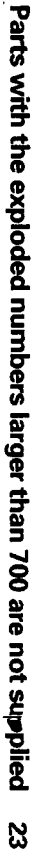






**Y05-2900-10**

KP-A3060





# KR-A3060

## PARTS LIST

PCB UNIT	Ref no of electric parts	DESTINATION				
		K	P	R	M	X
RECEIVER	1 x X, 8 x X		WP4060K2		WP4061K1	WP4062K2
VOL / LOUDNESS	2 x X				WP4051 K2	WP4063K3
AMP SUB	3 x X			WP4009 K2		WP4064 K2
TOKE CONTROL	4 x X		WP4052 K2		WP4053 K2	WP4054 K2
SPSW/PHONES	5 x X			WP4049 K2		WP4050 K2
S/W POWER	6 x X				WP4055 K2	
FRONT	9 x X		WP4052 K2		WP4053 K2	WP4054 K2
POWER	F1, 2, S01		WP4056 K2		WP4057 K2	WP4058 K2
						WP4059 K2

1

\* New Parts  
Parts without Parts No. are not supplied  
Les articles non mentionnés dans le Parts No. ne sont pas fournis  
Teile ohne Parts No. werden nicht geliefert

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
KR-A3060(UNIT)						
601	1A		A01-1974-08	METALLIC CABINET	MXE	
601	1A	*	A01-3170-08	METALLIC CABINET	KPR	
602	2A	*	A60-0637-08	PANEL FRONT		
607	2A	*	B10-2055-08	FRONT GLASS		
-			B46-0092-33	WARRANTY CARD	K	
-			B46-0096-43	WARRANTY CARD	X	
-			B46-0121-33	WARRANTY CARD	P	
-			B46-0122-23	WARRANTY CARD	E	
-			B46-0197-00	QUESTION CARD	K	
-		*	B60-1583-08	INSTRUCTION MANUAL(ENGLISH)	KX	
-		*	B60-1584-08	INSTRUCTION MANUAL(ENG,FRE)	P	
-		*	B60-1585-08	INSTRUCTION MANUAL(E,F,D,N,I)	E	
-		*	B60-1586-08	INSTRUCTION MANUAL(ENG,CHI)	M	
-		*	B60-1618-08	INSTRUCTION MANUAL(SPANISH)	R	
△ 610	1A		E03-0115-05	AC PLUG ADAPTOR	M	
△ 611	1C		E03-0120-08	AC OUTLET	ME	
△ 611	1C		E03-0121-08	AC OUTLET	KPR	
△ 611	1C		E03-0141-05	AC OUTLET	X	
△ 612	1C		E30-0459-05	AC POWER CORD	ME	
△ 612	1C		E30-0974-05	AC POWER CORD	KPR	
△ 612	1C		E30-2714-05	AC POWER CORD	X	
613	1C		E21-0023-08	TERMINAL GND		
615	2B,2C		G13-0267-08	CUSHION (FOOT)	KPMXR	
615	2B,2C		G13-0275-08	CUSHION (FOOT)	E	
-			H10-5348-08	POLYSTYRENE FOAMED FIXTURE		
-			H25-0675-08	PROTECTION BAG		
-			H25-0676-04	PROTECTION BAG		
-		*	H50-1030-08	ITEM CARTON CASE	KPXR	
-		*	H50-1031-08	ITEM CARTON CASE	M	
620	2B,2C		J02-1079-08	FOOT	E	
620	2B,2C	*	J02-1107-08	FOOT	KPMXR	
621	1B		J19-2815-04	ANTENNA HOLDER		
622	1C		J42-0198-08	AC CORD BUSHING		
623	2A		K27-2033-08	KNØB(SPEAKERS A,B ON/OFF)		
624	2B		K29-4444-08	KNØB(BALANCE)		
625	2A	*	K29-5952-08	KNØB(BASS,TREBLE)		
626	2A	*	K29-5954-08	KNØB(LOKEY)		
627	2A		K29-5953-08	KNØB(VOLUME CONTROL)		
628	1B	*	K29-5956-08	KNØB(POWER ON/OFF)		
629	2A	*	K29-5999-08	KNØB(VIDEO, TAPE, TUNER, PHONO, CD)		
630	2B	*	K29-6000-08	KNØB(LOUDNESS)		
△ 633	1B		L07-0383-08	POWER TRANSFORMER	P	
△ 633	1B		L07-0385-08	POWER TRANSFORMER	X	
△ 633	1B		L07-0387-08	POWER TRANSFORMER	KR	
△ 633	1B		L07-0389-08	POWER TRANSFORMER	M	
△ 633	1B		L07-0567-08	POWER TRANSFORMER	E	
635	1C		S62-0032-08	SLIDE SWITCH IMPEDANCE SEL		
A	1A		N09-3094-08	SCREW		
B	1B		N09-0333-05	TAPPING SCREW		
C	1C		N84-3008-46	TAPTITE SCREW		
D	1A		N89-3006-46	BINDING HEAD TAPTITE SCREW		

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2

Ref. No. 参照番号	Address 位置	New Parts	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
E	1A		N89-3008-45	BINDING HEAD TAPTITE SCREW		
F	2A		N89-3008-46	BINDING HEAD TAPTITE SCREW		
G	1B		N89-3010-46	BINDING HEAD TAPTITE SCREW		
H	1B, 2B		N89-4008-46	BINDING HEAD TAPTITE SCREW		
640	1B		T90-0184-08	LOOP ANTENNA		
641	1B		T90-0182-05	FM INDORR ANTENNA		
642	1A		T90-0185-05	ANTENNA ADAPTOR	E	
<b>ELECTRIC UNIT</b>						
C101, 102			CE04KW1H100M	ELECTR0 10UF 50WV		
C103, 104			CC45FCH1H221J	CERAMIC 220PF J	KPMXR	
C103, 104			CK45FB1H102K	CERAMIC 1000PF K	E	
C105, 106			CK45FB1H102K	CERAMIC 1000PF K	KPMXR	
C105, 106			CC45FCH1H221J	CERAMIC 220PF J	E	
C107, 108			CE04KW1C101M	ELECTR0 100UF 16WV		
C109, 110			CF92FV1H123J	MF 0.012UF J		
C111, 112			CF92FV1H332J	MF 3300PF J		
C113, 114			CE04KW1H4R7M	ELECTR0 4.7UF 50WV		
C115-118			CC45FCH1H221J	CERAMIC 220PF J	E	
C119, 120			CE04KW1H010M	ELECTR0 1.0UF 50WV		
C121			CE04KW1HR47M	ELECTR0 0.47UF 50WV		
C122, 123			CE04KW1V220M	ELECTR0 22UF 35WV		
C124-126			CK45FF1H103Z	CERAMIC 0.010UF Z		
C127-130			CF92FV1H104J	MF 0.10UF J	E	
C127-130			CF92FV1H473J	MF 0.047UF J	KPMXR	
C131			CK45FF1H103Z	CERAMIC 0.010UF Z		
C132			CE04KW1H4R7M	ELECTR0 4.7UF 50WV		
C133			CE04KW1C220M	ELECTR0 22UF 16WV		
C134			KHR-PA1611C2	ELECTR0 22UF 16WV		
C135			CE04KW1C330M	ELECTR0 33UF 16WV		
C136-138			CE04KW1C470M	ELECTR0 47UF 16WV		
C139			CE04KW1C101M	ELECTR0 100UF 16WV		
C141			CE04KW1C470M	ELECTR0 47UF 16WV		
C142			CE04KW1C2R2M	ELECTR0 2.2UF 16WV	E	
C142			CE04KW1C2R2M	ELECTR0 2.2UF 16WV	KPMXR	
C143			CE04KW1H471M	ELECTR0 470UF 50WV		
C144			CE04KW1V101M	ELECTR0 100UF 35WV		
C145			CE04KW1H100M	ELECTR0 10UF 50WV		
C146, 147			CK45FB1H103Z	CERAMIC 0.010UF Z		
C148, 149		*	KHR-PE0221G2	ELECTR0 4700UF 50WV		
C150, 151			CK45FB1H103Z	CERAMIC 0.010UF Z		
C152, 153			CK45FF1H103Z	CERAMIC 0.010UF Z		
C154-157			CK45FB1H223Z	CERAMIC 0.022UF Z	E	
C158, 159			CF92FV1H104J	MF 0.10UF J		
C160, 161			CK45FB1H223Z	CERAMIC 0.022UF Z	E	
C162, 163			CK45FB1H102K	CERAMIC 1000PF K	E	
C196			CE04KW1H4R7M	ELECTR0 4.7UF 50WV		
C197			CK45FF1H103Z	CERAMIC 0.010UF Z		
C198, 199			CE04KW1C470M	ELECTR0 47UF 16WV		
C201, 202			CF92FV1H273J	MF 0.027UF J		
C301			CC45FSL1H680J	CERAMIC 68PF J		
C302			CC45FCH1H181J	CERAMIC 180PF J		
C303			CE04KW1H010M	ELECTR0 1.0UF 50WV		
C305			CC45FSL1H680J	CERAMIC 68PF J		
C306			CC45FCH1H040J	CERAMIC 4.0PF J	KPMXR	

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C306			CC45FCH1H150J	CERAMIC 15PF J	E	
C307			CC45FCH1H221J	CERAMIC 220PF J		
C308			CC45FSL1H680J	CERAMIC 68PF J		
C309			CC45FCH1H181J	CERAMIC 180PF J		
C310			CE04KW1H010M	ELECTR0 1.0UF 50WV		
C311			CC45FSL1H680J	CERAMIC 68PF J		
C313			CC45FSL1H680J	CERAMIC 68PF J		
C314			CC45FCH1H040J	CERAMIC 4.0PF J	KPMXR	
C314			CC45FCH1H150J	CERAMIC 15PF J	E	
C315			CC45FCH1H221J	CERAMIC 220PF J		
C316			CC45FSL1H680J	CERAMIC 68PF J		
C317, 318			CE04KW1H470M	ELECTR0 47UF 50WV		
C401, 402			CE04KW1H4R7M	ELECTR0 4.7UF 50WV		
C403, 404			CF92FV1H153J	MF 0.015UF J		
C405, 406			CC45FCH1H220J	CERAMIC 22PF J		
C407, 408			CK45FB1H822J	CERAMIC 8200PF J		
C409, 410			CF92FV1H683J	MF 0.068UF J		
C411, 412			CC45FCH1H101J	CERAMIC 100PF J		
C413, 414			CF92FV1H333J	MF 0.033UF J		
C501, 502			CC45FSL1H221J	CERAMIC 220PF J	E	
C601			KHR-QM4726M6	CERAMIC 4700PF		
C801			CE04KW1H010M	ELECTR0 1.0UF 50WV		
C802			CE04KW1C470M	ELECTR0 47UF 16WV		
C803			CF92FV1H273J	MF 0.027UF J		
C804			CE04KW1H010M	ELECTR0 1.0UF 50WV		
C805			CE04KW1C470M	ELECTR0 47UF 16WV		
C806, 807			CK45FF1H103Z	CERAMIC 0.010UF Z		
C809			CK45FF1H223Z	CERAMIC 0.022UF Z		
C816			CK45FF1H223Z	CERAMIC 0.022UF Z		
C817			CE04KW1H2R2M	ELECTR0 2.2UF 50WV		
C818			CE04KW1H4R7M	ELECTR0 4.7UF 50WV		
C819			CK45FF1H223Z	CERAMIC 0.022UF Z		
C820			CE04KW1H3R3M	ELECTR0 3.3UF 50WV		
C821			CK45FF1H103Z	CERAMIC 0.010UF Z		
C822			CK45FF1H223Z	CERAMIC 0.022UF Z		
C823			CE04KW1H100M	ELECTR0 10UF 50WV		
C824			CK45FF1H223Z	CERAMIC 0.022UF Z		
C825			CF92FV1H153J	MF 0.015UF J		
C826			CE04KW1H100M	ELECTR0 10UF 50WV		
C827			CE04KW1HR47M	ELECTR0 0.47UF 50WV		
C828-830			CK45FF1H103Z	CERAMIC 0.010UF Z		
C831			CC45FCH1H101J	CERAMIC 100PF J		
C832			CK45FF1H103Z	CERAMIC 0.010UF Z		
C833			CE04KW1C470M	ELECTR0 47UF 16WV		
C834			CK45FB1H471K	CERAMIC 470PF K	E	
C835			CC45FSL1H121J	CERAMIC 120PF J	E	
C836			CC45FCH1H271J	CERAMIC 270PF J	E	
C837			CF92FV1H152J	MF 1500PF J	E	
C838			CF92FV1H122J	MF 1200PF J	E	
C839			CC93FCH1H471J	CERAMIC 470PF J		
C840			CE04KW1H2R2M	ELECTR0 2.2UF 50WV		
C841			CE04KW1H3R3M	ELECTR0 3.3UF 50WV		
C842			CE04KW1HR47M	ELECTR0 0.47UF 50WV		
C843			CF92FV1H473J	MF 0.047UF J		
C844			CK45FB1H471K	CERAMIC 470PF K		

PARTS LIST

KR-A3060

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4

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C845 C846, 847 C846, 847 C848 C849			CK45FF1H103Z CC45FSL1H151J CK45FB1H102K CC45FCH1H221J CE04KW1C221M	CERAMIC 0.010UF Z CERAMIC 150PF J CERAMIC 1000PF K CERAMIC 220PF J ELECTRO 220UF 16WV	KPMXR E E	
C850, 851 C850, 851 C852 C853 C854, 855			CE04KW1H010M CE04KW1H2R2M CF92FV1H222J CF92FV1H562J CF92FV1H153J	ELECTRO 1.0UF 50WV ELECTRO 2.2UF 50WV MF 2200PF J MF 5600PF J MF 0.015UF J	KPMXR E M M MX	
C854, 855 C854, 855 C856 C857 C858, 859			CF92FV1H223J CF92FV1H472J CK45FF1H103Z CE04KW1C470M CC45FCH1H220J	MF 0.022UF J MF 4700PF J CERAMIC 0.010UF Z ELECTRO 47UF 16WV CERAMIC 22PF J	KP E	
C860-862 C863 C864 C865 C866, 867			CC45FCH1H101J CK45FF1H103Z CF92FV1H222J CF92FV1H562J CE04KW1C220M	CERAMIC 100PF J CERAMIC 0.010UF Z MF 2200PF J MF 5600PF J ELECTRO 22UF 16WV	M M E	
C868 C890 C901 C902 C903			CC45FCH1H101J CC45FCH1H220J CE04JW1HR47M CK45FF1H103Z CE04KW1A101M	CERAMIC 100PF J CERAMIC 22PF J ELECTRO R47UF 50WV CERAMIC 0.010UF Z ELECTRO 100UF 10WV	E	
C904 C905, 906 C907 C908 C909-912			KHR-PX0001N3 CE04KW1H010M CK45FF1H103Z CK45FF1H103Z CK45FF1H104J	ELECTRO 0.1F 5.5WV ELECTRO 1.0UF 50WV CERAMIC 0.010UF Z CERAMIC 0.010UF Z CERAMIC 0.10UF J	M	
C913			CC45FC1H680J	CERAMIC 68PF J		
JACK101 JACK102 JACK103 JACK104 JACK501	1C 1C 1C 1C 1B		E70-0035-08 E70-0036-08 E70-0036-08 E70-0004-08 E11-0263-08	PHONE JACK(2P)(PHONE) PHONE JACK(4P)(CD, TAPE) PHONE JACK(4P)(TAPE, VIDEO) LOCK TERMINAL BOARD(SPEAKERS) PHONE JACK(PHONES)		
JACK801 JACK901	1C 1C		E70-0005-08 E70-0023-08	LOCK TERMINAL BOARD(ANTENNA) LOCK TERMINAL BOARD(ANTENNA)	KPMXR E	
△ F1 △ F1 △ F2 △ F2 △ F3			F05-1623-05 F50-0012-08 F05-1623-05 F05-2525-05 F05-2015-05	FUSE(250V T1.6A) FUSE(125V 3.5A) FUSE(250V T1.6A) FUSE(250V T2.5A) FUSE(250V T0.2A)	MXE KPR M E ME	
- -			J13-0075-05 J13-0075-05	FUSE CLIP FUSE CLIP	ME	
CF801, 802 CF801, 802 CF803 L101, 102 L801			L72-0531-05 L72-0570-08 L72-0096-05 L39-1303-08 L40-1091-17	CERAMIC FILTER CERAMIC FILTER CERAMIC FILTER SMALL FIXED INDUCTOR SMALL FIXED INDUCTOR(1UH)	KPMXR E	
L802 L804 L806			L39-0189-05 L30-0488-05 L30-0439-05	COMBINATION COIL AM IFT FM IFT(DISCRIMINATOR ADJ.)		

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L809, 810 L811 L812 L901-905 X801			L72-0569-08 L33-0375-08 L33-0376-08 L40-1091-17 L77-1122-05	LC FILTER SMALL FIXED INDUCTOR(5.6mH) SMALL FIXED INDUCTOR(6.8mH) SMALL FIXED INDUCTOR(1UH) CRYSTAL RESONATOR(7.2MHz)	E E E	
X901			L78-0209-05	RESONATOR(4.194MHz)		
CP1, 2 CP1, 2 R137 R150, 151 R152, 153			KHR-RTOR21K0 R90-0187-05 RD14GB2E391J RD14GB2E470J RD14GB2E151J	MULTI-COMP 0.22X2 K 3W MULTI-COMP 0.22X2 K 5W FL-PROOF RD 390 J 1/4W FL-PROOF RD 47 J 1/4W FL-PROOF RD 150 J 1/4W	KPR MXE	
R157, 158 R159, 160 R164, 165 R177 R181			RD14GB2E470J RD14GB2E151J RS14KB3D100J RS14KB3A561J RD14GB2E331J	FL-PROOF RD 47 J 1/4W FL-PROOF RD 150 J 1/4W FL-PROOF RS 10 J 2W FL-PROOF RS 560 J 1W FL-PROOF RD 330 J 1/4W		
△ R183 △ R184, 185 △ R186 △ R188 R190			RD14GB2E101J RS14KB3D220J RS14KB3D222J RD14GB2E101J R92-0173-05	FL-PROOF RD 100 J 1/4W FL-PROOF RS 22 J 2W FL-PROOF RS 2.2K J 2W FL-PROOF RD 100 J 1/4W RC 2.2M M 1/2W	KPR	
R306 R309 R310 R318 R322, 323			RD14GB2E221J RD14GB2E221J RD14GB2E271J RD14GB2E271J RD14GB2E221J	FL-PROOF RD 220 J 1/4W FL-PROOF RD 220 J 1/4W FL-PROOF RD 270 J 1/4W FL-PROOF RD 270 J 1/4W FL-PROOF RD 220 J 1/4W		
R325 R326 R503, 504 R806 R810			RD14GB2E101J RD14GB2E470J RS14KB3A561J RD14GB2E101J RD14GB2E101J	FL-PROOF RD 100 J 1/4W FL-PROOF RD 47 J 1/4W FL-PROOF RS 560 J 1W FL-PROOF RD 100 J 1/4W FL-PROOF RD 100 J 1/4W		
R836 R851 R869 R933, 934 VR101, 102			RD14GB2E101J RD14GB2E820J RD14GB2E221J RD14GB2E102J R12-1066-05	FL-PROOF RD 100 J 1/4W FL-PROOF RD 82 J 1/4W FL-PROOF RD 220 J 1/4W FL-PROOF RD 1.0K J 1/4W POTENTIOMETER(1K)(IDLE CURRENT		
VR201 VR202 VR401, 402 VR801 VR802	2B 2B 2A		R06-5200-08 R01-5084-08 KHR-VR075001 R12-3166-08 R12-1053-05	POTENTIOMETER 100K(VOLUME) POTENTIOMETER 200K(BALANCE) POTENTIOMETER(100K)(BASS, TREB) POTENTIOMETER(33K)(FM T-LEVEL) POTENTIOMETER(4.7K)(VCO)		
VR803 VR804			R12-5079-08 R12-3071-05	POTENTIOMETER(220K)(SEPARATION POTENTIOMETER(10K)(AM T-LEVEL)	E	
△ K1 △ S01 △ SW201 △ SW501 △ SW601		*	S76-0035-08 S62-0014-08 S68-0040-08 S42-2156-05 S40-1089-05	MAGNETIC RELAY SLIDE SWITCH(VOLTAGE SELECTOR) PUSH SWITCH(LOUDNESS) PUSH SWITCH(SPEAKERS ON/OFF) PUSH SWITCH(POWER)	M	
SW801 SW901-923	1C 2A, 2B	*	S62-0012-08 KHR-ST0530G1	SLIDE SWITCH(DE-EM., CH. SPACE) TACT SWITCH	M	
D101-106 D107 D108, 109			1SS133 RD3.9ES(B2) 1SS133	DIODE ZENOR DIODE DIODE		

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KR-A3060

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△ D110 D111, 112 D113, 114 D115 D116			1N4002 RD6.2ES(B2) 1N4002 RD16ES(B2) RD11ES(B2)	DIODE ZENER DIODE DIODE ZENER DIODE ZENER DIODE		
△ D117 D118 D119 D301, 302 D801, 802			RD6.8ES(B2) 1N4002 D3SBA20F03 1SS133 1SS133	ZENER DIODE DIODE DIODE DIODE DIODE		
D804 D810 D811, 812 D901 D902-904			1SS133 RD5.1ES(B2) 1SS133 RD10ES(B2) 1SS133	DIODE ZENER DIODE DIODE ZENER DIODE DIODE	E	
D905 D906, 907 D908 D910 FLT901	2B	*	1SS133 1SS133 1SS133 1SS133 5-MT-167GK	DIODE DIODE DIODE DIODE FLOURESCENT INDICATOR TUBE	XE KPR	
IC1 IC2 , 3 IC4 IC5 IC801			NJM4558DD TC4052BP UPC1237HA UPC7812HF LA1265	IC(OP AMP X2) IC(4CH MPX/DE-MPX) IC(POWER AMP) IC(VOLTAGE REGULATOR/ +12V) IC(FM/AM TUNER)		
IC802 IC803 IC901 IC902 Q101, 102			AN7470 LM7001 CXP5016-531S RST529C 2SC2878(B)	IC(FM MPX) IC(PLL FREQUENCY SYNTHESIZER) IC(4BIT MICROPROCESSOR) IC(RESET) TRANSISTOR		
Q103 Q104, 105 Q106 Q107, 108 Q109			DTA114TS 2SC2878(B) DTA114TS 2SC4137(V,W) 2SC2316(Y)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
△ Q110, 111 △ Q112 △ Q113 △ Q114 △ Q116			2SA916 2SC2316(Y) 2SC4467*5 2SA1694*5 2SA1694*5	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
△ Q117 Q118, 119 Q120 Q121 Q122			2SC4467*5 2SC1845(F,E) 2SA992 2SC2316(Y) KHR-TN0965Y2	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q301-304 Q305-308 Q309, 310 Q801 Q803			2SA992(F,E) 2SC1845(F,E) 2SA992(F,E) KHR-TP319401 2SC1740S(Q,R)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q804 Q807 Q808, 809 Q811, 812 Q901			2SC1845(F,E) 2SC1740S(Q,R) 2SA933S(Q,R) 2SC1740S(Q,R) 2SC1740S(Q,R)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	E M	

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Q902			2SA933S(Q,R)	TRANSISTOR	M	
TU801 TU801	2C 2C		W02-1042-05 W02-1146-08	FM FRONT-END ASSY FM FRONT-END ASSY	KPMXR E	

## PARTS LIST

KR-A3060

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# KR-A3060

## SPECIFICATIONS

### Audio section

#### Rated power output

50 watts per channel minimum RMS, both channels driven at 8  $\Omega$ , from 30Hz to 20,000Hz with no more than 0.09% total harmonic distortions.(FTC)

Total harmonic distortion(1kHz, 8 $\Omega$ ) ..... 0.03% at 25W

#### Signal to noise ratio (IHF A)

PHONO(MM) ..... 76dB(6mV input)

CD, TAPE, VIDEO ..... 100dB

#### Input sensitivity / impedance

PHONO(MM) ..... 2.5mV/47k $\Omega$

CD, TAPE, VIDEO ..... 200mV / 47k $\Omega$

#### Tone controls

BASS .....  $\pm 10$ dB(at 100 Hz)

TREBLE .....  $\pm 10$ dB(at 10 kHz)

Loudness control at -30dB level ..... +8dB(100 Hz)

### FM Tuner section

Tuning frequency range ..... 87.5MHz~108MHz

Usable sensitivity(IHF) ..... 13.2dBf(1.2 $\mu$  V at 75 $\Omega$ )

#### 50 dB quieting sensitivity

STEREO ..... 41.2dBf(32 $\mu$  V at 75 $\Omega$ )

#### Total harmonic distortion at 1kHz

MONO ..... 0.6%

STEREO ..... 0.7%

#### Signal to noise ratio at 65 dBf(IHF)

MONO ..... 75 dB

STEREO ..... 68 dB

#### Selectivity(IHF $\pm 400$ kHz)

..... 50 dB

#### Stereo separation (IHF at 1kHz)

..... 40 dB

Frequency response ..... 30Hz~15kHz, +0.5 dB, -3.0 dB

### AM Tuner section

Tuning frequency range ..... 530kHz~1,700kHz

Usable sensitivity ..... 12 $\mu$  V / (500 $\mu$  V /m)

Total harmonic distortion ..... 0.7%

Signal to noise ratio ..... 48 dB

selectivity ..... 30 dB

### General

Power consumption ..... 1.3A

#### AC outlet

SWITCHED ..... 1 : (200W, 1.6 A max.)

Dimensions ..... W : 440mm(17-5/16")

H : 129mm (5-5/8")

D : 284mm(13-18")

Weight(net) ..... 5.7kg(20.9 lb)

Note : KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

#### Note:

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the U.S.A.(K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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